

Berkeley Center for Negative Capacitance Technology Affiliate Agreement

This Agreement, effective on October 1, 2016 (“Effective Date”) is by and between The Regents of the University of California, Berkeley, acting on behalf of its Berkeley campus through its Industry Alliances Office, 2150 Shattuck Avenue, 10th Floor, Berkeley, CA 94704-6701 (hereinafter referred to as “UCB”) and Huawei Technologies Co., Ltd, having an address at Administration Building, Huawei Base, Bantian, Longgang District, Shenzhen, 518129 P.R. China (hereinafter referred to as “Member”). Each of UCB and any Member may also be called herein a “Party” or collective the “Parties.” This Agreement (“Agreement”) will govern the terms and conditions of Member’s membership in UCB’s Berkeley Center for Negative Capacitance Technology (“BCNCT” or “Center”).

1. Background and Unique Resources

The BCNCT Affiliates Program is an industry membership program that is operated by UCB. The BCNCT Affiliates Program exists to inspire, nurture and sustain a vibrant industrial-academic community focused on the development of negative capacitance technology for semiconductor industry’s need, and their introduction into commercial use by the participation of Members.

Negative capacitance effect originates from the ability to control phase transition in materials with stored energy such as the ferroelectric material. By appropriately engineering phase transition, it is possible to obtain negative differential capacitance that can lead to less than 60 mV/decade subthreshold swing in CMOS technology. In addition, negative capacitance effect could provide fundamental advances in reducing interconnect capacitance, improved transconductance for analog applications and nano scale oscillators for non-Boolean computing. Therefore, negative capacitance effect can potentially benefit a wide range of applications.

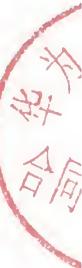
Center membership fees support a unique research effort on research of negative capacitance in terms of fundamental physics, material optimization and device fabrication. The combination of UCB researchers with proven records of useful research and service to industry, industry leader members, and potential government funding agencies provides an environment for making truly significant contributions to research and industry.

2. Program Management

The BCNCT shall be directed by a UCB faculty director or UCB faculty co-directors and advised by an industrial advisory board comprised of one representative of each Member (“Industrial Advisory Board”).

3. Cost

During the Term, Member will provide to UCB an annual membership fee of U.S. \$140,000, payable in U.S. dollars, as payment for its membership in the BCNCT (“Annual Membership Fee”). Any other change to Member’s Annual Membership Fee will not apply to previous membership periods, and can only be made by written



amendment to this Agreement by duly authorized representatives of UCB and Member. The Annual Membership Fee shall be due forty-five (45) days following Member's receipt of the original, a signed invoice from UCB.

Checks shall be made payable to UC Regents, indicating the purpose of the payment ("BCNCT Membership"), should be sent to:

Contracts and Grants Accounting
ATTN: Manager
2195 Hearst Avenue, Room 130
Mail Code 1103
University of California
Berkeley, California 94720-1103

Or if by electronic wire transfer to:

Bank of America
Concord, California USA
Routing No. 026009593
Account No. 0175380001

UCB will invoice Member when payment is due. Invoice should be mailed or emailed to:

Huawei Technologies Co. Ltd.
Administration Building,
Huawei Base,
Bantian, Longgang District,
Shenzhen, 518129 P.R. China
Attention: Ms. Jiang PinTing 00270396, Building D3

Each Party shall be responsible for any fees from their respective bank.

All the taxes and expenses levied by the government to Sponsor in the territory of Sponsor shall be paid by Sponsor. All the taxes and expenses levied by the government to Berkeley in the territory of Berkeley shall be paid by Berkeley.

4. Membership Benefits and Options

As a member of BCNCT, Member will be entitled to the following benefits:

- a. Pre publication access to Journal and Conference papers and theses.
- b. A seat on the Industrial Advisory Board
- c. Ability to influence research by assigning up to 50% of Annual Membership Fee to preferred Center project(s).
- d. Customized access to Center faculty and graduate students.

- e. Access to quarterly E-Workshops.
- f. Early networking with Center students for internships and employment.
- g. In the event an Invention is developed from a project funded solely by pooled Center membership fees, Member shall have the rights outlined in Section 5(a).
- h. Possible early access to Inventions developed from Center projects funded by agencies of the Federal government or the State of California as further described in Section 5(b).
- i. Option of sending a visiting researcher to the Center as a Member of Center research team at additional cost.
- j. Option of funding the Center above and beyond the Annual Membership Fee. Member may assign any such voluntary membership fee to preferred Center project(s).
- k. Members-only Center annual research review.
- l. Invitation to Berkeley EECS Annual Research Symposium (BEARS)

5. Intellectual Property and Licensing

(a) Research projects solely funded by Membership Fees. All inventions conceived and first reduced to practice in the performance of research conducted by BCNCT under this Agreement (“BCNCT Inventions”), and all patent rights thereto, will belong to UCB, subject UC policy, and to UCB’s legal obligations under Federal and State law. Rights to Inventions will be made available to Members by UCB’s Office of Technology Licensing (OTL), subject to UCB’s legal right to do so, as follows:

i. Internal Use To the extent that UCB shall have the legal right to grant, University shall grant to Member and its Affiliates, subject to the terms and conditions of this Agreement, non-exclusive, royalty-free, non-transferable, non-sublicensable license to patentable BCNCT Inventions, funded solely by membership fees, for internal and non-commercial educational, research, and evaluation uses during the Term (hereafter, “Internal Use”). Licensed Member shall not redistribute the BCNCT Invention or license without prior written permission from UCB’s OTL. “Affiliates” shall mean entities that control, or are controlled by, or are under common control with a party to this Agreement. For the purposes of this definition, ‘control’ shall mean direct or indirect ownership of at least fifty percent (50%) of the voting power, capital or other securities of controlled or commonly controlled entity.

ii. Commercial Use To the extent that UCB shall have the legal right to grant, and in consideration of Member’s good standing in payment of membership fees, Member shall have, with other members, a time-limited first right to negotiate with UCB’s OTL for a commercial license that is non-exclusive, royalty free, and paid up in perpetuity (by paying a pro-rata share of patent costs as further described in 5.a.iii) for patent rights covering BCNCT Inventions, funded solely by membership fees, beyond the Internal Use of the BCNCT Inventions as provided under Article 5(a)i.

The first right to negotiate shall expire ninety (90) days from date of disclosure of such BCNCT Invention by OTL to Member. Following the expiration of that first right period, Member and OTL can negotiate a commercial license for the patent rights covering the Invention in good faith and without restrictions on the terms and conditions of the license.

iii. All Members obtaining a non-exclusive license under this section shall pay a pro-rata share of out-of-pocket costs incurred by UCB for preparation, filing and prosecution of patent applications and maintenance of resulting patents.

(b) Research projects solely funded by Government. When the sole source of funds for a BCNCT research project is from Federal/State Government sources awarded to the Center, rights to intellectual property developed under such funding will be governed by University of California or Federal/State policies in effect at that time. BCNCT may apply for center grant funds (such as under NSF Industry/University Cooperative Research Centers Program). In the event Center is awarded such a Federal/State Government grant, Members may have a time-limited right for sixty (60) days to negotiate a royalty-bearing commercial license to Software or Inventions resulting from such funding.

The schedule of licensing provisions in this Section 5 does not convey any express or implied rights in any other intellectual property of UCB except for the specific license rights provided under Section 5(a) and 5(b) of this Agreement.

(c) Background Intellectual Property of BCNCT Co-Directors. UCB's OTL will identify known background intellectual property of BCNCT co-directors and/or of his/her research team members to Member prior to the start of the Agreement. In addition to the above, UCB's OTL will pro-actively and periodically identify additional potentially blocking Background IP of BCNCT co-directors and/or of his/her research team members fully funded by membership fees which become apparent during the Member's membership period. UCB will offer a license upon mutually agreeable terms and at reasonable royalties to Members in good standing to any blocking intellectual property developed by the co-directors and/or of his/her research team members fully funded by membership fees to the extent that it is legally able to do so. If the parties are unable to agree on the terms and royalties, these will be determined by arbitration.

(d) Ownership and Licensing. Each Party shall retain all ownership rights, title and interest in its intellectual property rights obtained on its own before or outside the scope of this Agreement. Subject to the UC Patent Acknowledgment signed by any visitors to UCB from Members, the ownership of BCNCT Inventions shall be determined in accordance with U.S. patent laws of inventorship. All BCNCT Inventions created solely by employees of one Party using their own facilities and shall be solely owned by such Party. All BCNCT Inventions created by employees of more than one Party shall be co-owned by those Parties, each co-inventing Party having an equal and undivided interest therein. Each co-inventing Party may freely use and license the jointly owned BCNCT Inventions as if they were the sole owner without accounting to the other Party/Parties

and without prior approval of the other Party/Parties. On account of license rights offered to all BCNCT Members under Section 5.(a), no jointly inventing Party shall have standing to exclusively license UCB's interest in any such jointly invented BCNCT Invention.

6. Confidentiality

(a) During the period of Members' participation in BCNCT under the terms of this Agreement, UCB may provide Member certain Prepublication Data and Invention Disclosures (collectively "BCNCT Data") related to the research activities of BCNCT Researchers. As used herein, Prepublication Data means results of research including but not limited to that presented by BCNCT to Member at meetings or through pre-publication drafts, that have not yet been published by the researchers at the time of such presentation or disclosure. Prepublication Data may be oral, visual, or written, and may also include information provided or delivered by electronic means. If written, it shall be clearly marked "Prepublication Data." If disclosed orally or visually, the material considered Prepublication Data shall be identified at the time of disclosure and shall be so designated in writing to Member within thirty (30) days of its original disclosure. As used herein, Invention Disclosure means written descriptions of inventions or discoveries provided by UCB to Member.

(b) Member will maintain BCNCT Data (comprising Prepublication Data and Invention Disclosures) in confidence for one (1) year from the date such BCNCT Data is disclosed, even if Member is no longer a member of BCNCT.

(c) With regard to BCNCT Data, Member agrees:

- i. to receive Invention Disclosures for the sole purpose of evaluating its interest in obtaining a commercial license from UCB;
- ii. to safeguard BCNCT Data against disclosure to others with the same degree of care as it exercises with its own data of similar nature; and
- iii. not to disclose BCNCT Data to others (except to its employees, Affiliates, agents, or consultants who are bound to Member by a like obligation of confidentiality) without express written permission of UCB except that Member shall not be prevented from using or disclosing any of the BCNCT Data which:
 - a. Member can demonstrate by written record was in its possession prior to receipt from UCB;
 - b. is now, or becomes in the future, public knowledge other than through acts or omissions of Member;
 - c. is lawfully obtained by Member from sources independent of UCB;
 - d. is required to be disclosed by operation of law, provided that UCB has received advanced written notice of the proposed disclosure by the Member; or

- e. is disclosed by UCB to a third party without a nondisclosure obligation.
- f. is independently developed by or for Member

It is further agreed that the furnishing of BCNCT Data to Member will not constitute any grant or license to Member under any legal rights now or hereinafter held by UCB.

7. Publication

UCB will have the right to copyright, publish, disclose, disseminate and use, in whole or in part, any data or information developed under this Agreement. Copies of any proposed publication will be provided to Member concurrently with submission for publication, for Member's review. If an employee of Member is a co-author on a BCNCT publication, Member shall have a 30 review period prior to submission for publication, and may request modification or removal of any Member confidential information.

8. Term and Termination

This Agreement will remain in effect for five (5) years from the Effective Date ("Term") or until terminated by either party, whichever occurs first. Either party may terminate the Agreement for convenience by providing written notice of such termination (Notice of Termination). Termination will be effective ninety (90) days from receipt of Notice of Termination (Effective Date of Termination). Member shall pay Annual Membership Fees up to but not beyond the Effective Date of Termination.

9. Use of Name

Except as required by law, Member agrees not to use the name "The Regents of the University of California," the name of any campus of the University of California, the name of the Berkeley Center for Negative Capacitance Technology (BCNCT), or any abbreviation or derivative of the foregoing, or the names of any of its faculty in any advertisement, publicity, or other release, with reference to this Agreement without the prior written consent of UCB's Business Contracts and Brand Protection office.

Official notices under this Agreement shall be rendered to:

For UCB Business:	For Member Business:
Eric Giegerich Director Industry Alliances Office University of California, Berkeley 2150 Shattuck Avenue, 10th Floor Berkeley, CA 94720-6701	Liang Peng Director 2330 Central Expressway, B2-187 Santa Clara, CA 95050
For BCNCT:	
Sayeef Salahuddin 515 Sutardjai Hall	

Berkeley CA 94720
Phone: 510-642-4662
Email: sayeef@berkeley.edu

10. Limited Warranty and Liability

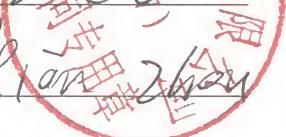
MEMBER UNDERSTANDS THAT INVENTIONS ARE EXPERIMENTAL IN NATURE, AND UCB MAKES NO REPRESENTATIONS, CONDITIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED WITH RESPECT TO ANY OF THE BCNCT INVENTIONS. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, UCB EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTY, CONDITION OR REPRESENTATION THAT THE INVENTION CORRESPONDS WITH A PARTICULAR DESCRIPTION, IS OF MERCHANTABILITY QUALITY OR FIT FOR A PARTICULAR PURPOSE. UCB SHALL NOT BE LIABLE FOR ANY LOSS, WHETHER DIRECT, CONSEQUENTIAL, INCIDENTAL OR SPECIAL (AND WHETHER ARISING OUT OF CONTRACT OR TORT) WHICH MEMBER MAY SUFFER ARISING FROM ANY DEFECT, ERROR, FAULT OR FAILURE TO PERFORM WITH RESPECT TO THE INVENTION. NOTHING IN THIS AGREEMENT SHALL BE CONSTRUED AS A WARRANTY OR REPRESENTATION BY UCB THAT THE INVENTIONS ARE OR WILL BE FREE FROM INFRINGEMENT OF PATENTS, COPYRIGHTS, TRADEMARKS, INDUSTRIAL DESIGNS OR OTHER INTELLECTUAL PROPERTY RIGHTS OF ANY THIRD PARTY.

11. General

This Agreement shall be interpreted in accordance with the laws of the State of California. UCB and Member are independent contractors; Member employees shall not be entitled to UCB employee benefits. Any changes in the terms of this Agreement shall be valid only if made under joint written agreement and signed by the authorized representatives of both parties. This Agreement shall not be assigned by either party without the prior written consent of the other party. The UCB Business representative identified in Article 6 shall be notified concerning any inconsistency. This Agreement states the entire agreement of the parties and supersedes any prior discussions, proposals, negotiations and representations. Delivery of an executed counterpart by facsimile or email shall be effective to the fullest extent permitted by applicable law.

HUAWEI TECHNOLOGIES CO., LTD.

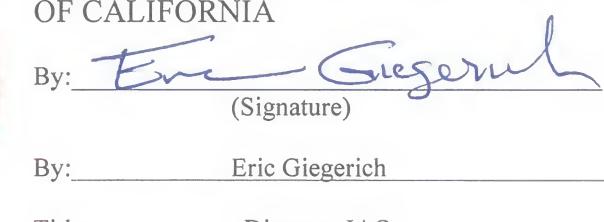
By: 
(Signature)

By: 
Julian Zhou

Title: VP

Date: Hisilicon
2016-1-9

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA

By: 
(Signature)

By: Eric Giegerich

Title: Director, IAO

Date: September 20, 2016

